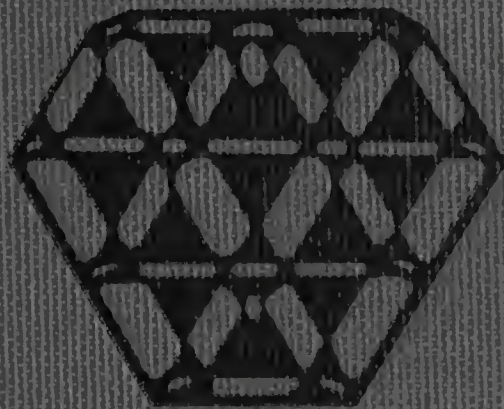


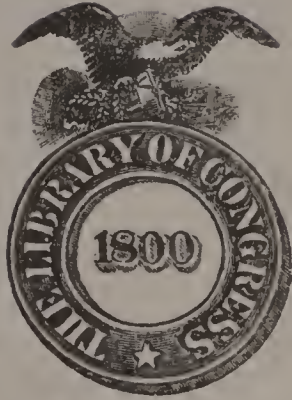
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FIFTY NUMBER GAMES



by
A. E. SAMPLE



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FIFTY NUMBER GAMES
FOR PRIMARY GRADES

FIFTY NUMBER GAMES FOR PRIMARY GRADES

BY

ANNA ELIZA SAMPLE

COACHING TEACHER

LAWRENCEVILLE (N. J.) PUBLIC SCHOOLS

AUTHOR OF

PRIMARY GAMES TO TEACH PHONETICS



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FIFTY NUMBER GAMES

FOR PRIMARY GRADES

I

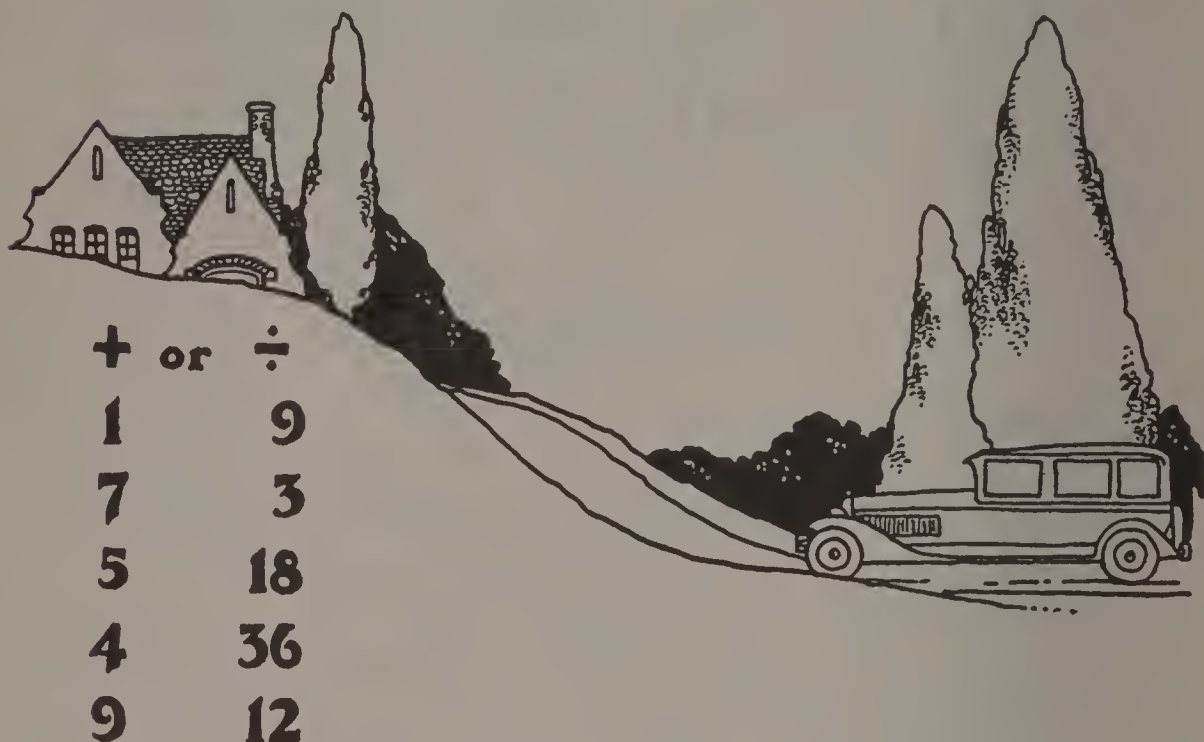
AUTOMOBILE RACE

MATERIAL: None.

OBJECT: To teach rapidity in addition, subtraction, multiplication and division operations.

PROJECT: Draw automobiles. Bring names of automobiles and pictures of same to school. Mount on cardboard. Make automobile tags of cardboard. Model a cardboard automobile. Build a garage of blocks or newspaper logs. Draw two automobiles upon the board or mount pictures of the same. The players may name their automobiles any make of car, writing the name on or below the pictures. Place similar numbers under each car.

GAME: 1. Two players are chosen. Each stands by his car with an eraser. Teacher or Leader asks: $5-4=?$ Pupil quickly erases 1. Teacher asks $10-6=?$ She continues until all the numbers



have been erased. The first player erasing all the numbers wins.

It is not a difficult task for the teacher to watch the two players to prevent mistakes or unfair play.

2. Give problems in addition.

3. Increase the numbers and give problems in multiplication.

4. Change the numbers and substitute problems in division.

5. Competitive race for two divisions of pupils. Two rows of pupils stand at the blackboard.

Each row chooses a name for its automobile. Each player has one chance to erase the correct answer. If successful, the pupil returns to his desk. If he fails, he takes his place behind the last player and waits another turn. The row whose players leave the board first wins the race.

II

BO PEEP'S SHEEP

MATERIAL: Tag board or stiff white paper for cutting.

OBJECT: Recognition of the different number combinations resulting in the same number, as all number combinations in addition resulting in 10, or all number combinations in multiplication resulting in 24, etc.

PROJECTS: 1. Cut sheep free-hand or from a pattern.

2. Write an addition number combination resulting in 10 on each sheep; or make a set of sheep with multiplication combinations resulting in 36.

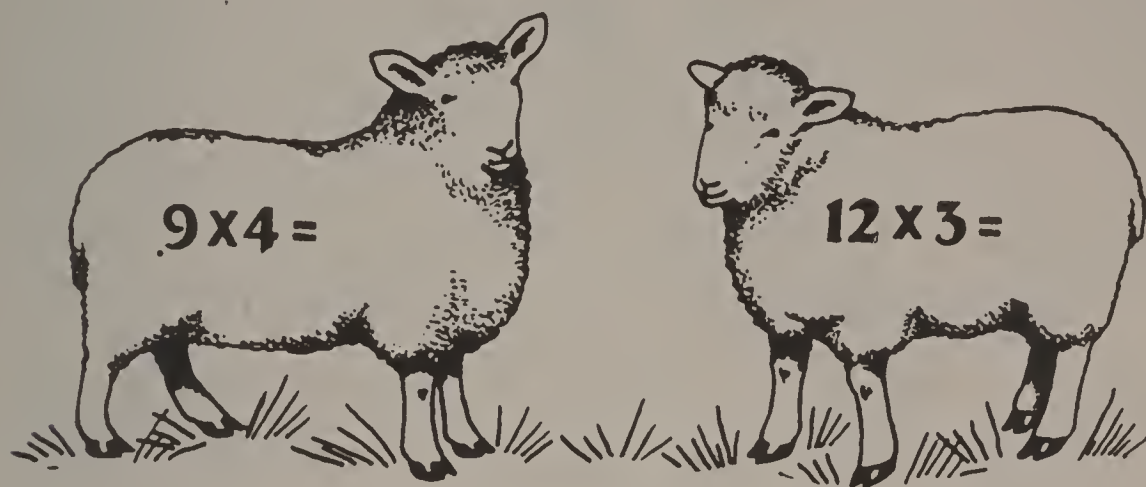
3. Bring pictures of sheep to school. Count them.

4. Study food for sheep, care taken of them, etc.

5. Where wool is obtained. Trace its manufacture into yarn, cloth, etc.

6. Bring samples of woollen cloth, yarn, etc., to school.

7. Make a list of articles made of wool.



GAME: Place about the room or on the chalk rail different number sets of sheep, such as sets of 10, 24, etc. Select a Bo Peep. She steps to a pupil's desk and says, "I have lost my sheep." Pupil says, "Do not cry. I will help you find them. Tell me their names."

Bo Peep replies, "Ten."

Pupil runs about the room followed by Bo Peep. He hunts for all the sheep with combinations making ten.

"Here is one," he says, " $9 + 1 = 10$." "Here is another, $3 + 7 = 10$."

When all are found, Bo Peep thanks him and takes her sheep home.

Another Bo Peep is chosen. If the class is large several children may help Bo Peep find her sheep.

III

CANDLESTICK GAME

MATERIAL: A candlestick. Manila or silver paper, also colored paper. Paste. Scissors.

OBJECT: To teach column addition; to develop the sense of distance and muscular control of the body.

PROJECT: Cut candlesticks of manila or silver paper. Cut a candle out of colored paper. Paste the candle on the candlestick. Cut a picture of Jack jumping over the candlestick. Mark three or more concentric circles upon the floor. Allow two feet between the circles. Place a number in each circle, the smallest number for the outer circle. Place candlestick in the center of circles.



A guide or guard mark is placed upon the floor to insure equal distance for each player.

GAME: 1. The pupils line up for the jump. The class may sing or recite:

Jack be nimble,
 Jack be quick,
 Jack jump over
 The candlestick.

The word *jump* is a signal for the player. He scores the number of the circle into which he jumped. If he lands on the line marking the circle, he scores one plus the number in the circle.

The players form a line opposite their first position and jump again. As many jumps are allowed the players as the teacher wishes numbers added in the column.

A score keeper is assigned to each child. This affords an opportunity for more children to play. Each score keeper marks the player's score upon the blackboard and adds it at the conclusion of the game. The highest score wins.

2. Two rows compete. Those at the desks keep score on their tablets.

3. Girls and boys compete. Those not competing keep score.

4. Tall and short children compete. Select players to keep the score.



IV

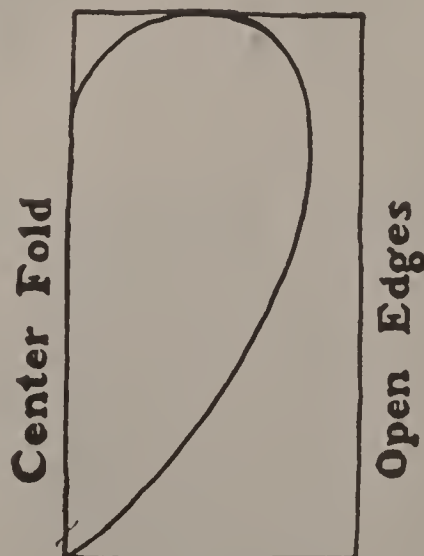
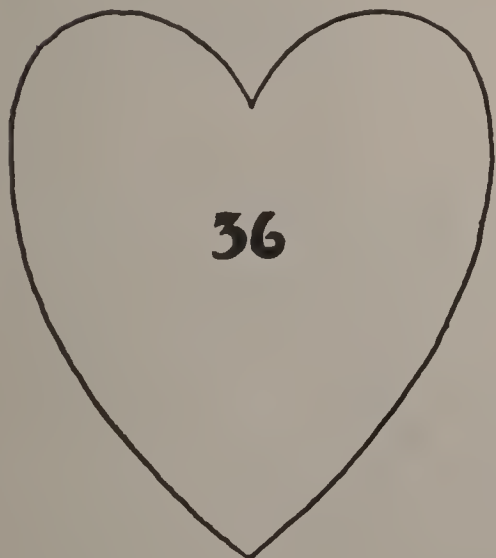
CATCH THE POSTMAN

MATERIAL: Red paper for cutting. Numbers cut from calendars. Paste. Scissors. A piece of cloth and a roll of tape.

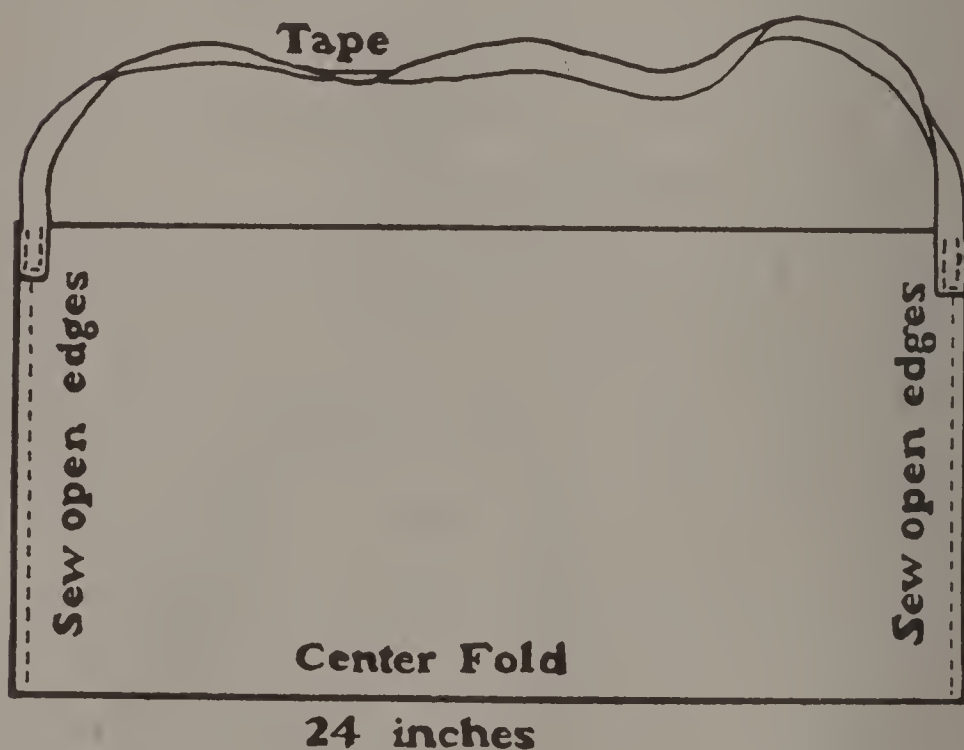
OBJECT: Development of concentration in solving a problem. Physical exercise.

PROJECTS: 1. First-grade pupils cut hearts from a pattern given them. Second and third grades cut paper into four-inch squares. Fold each square through the center and cut a heart as illustrated. Paste a number on each heart.

2. Plan and make a postman's bag of cloth. Fold



a 24-inch square piece of cloth through the center or in half. Sew the right and left sides. Measure a piece of tape 30 inches long. Sew to the open edge as illustrated.



GAME: Choose a Postman to carry the bag containing the hearts. Let the class form a ring. Each child holds his hand behind him. The Postman runs outside the circle and places a heart in some child's hand and runs from him. The child looks at the heart and tells a number combination suggested by the number on it. If

the number is 36, he may say $9 \times 4 = 36$. As soon as he gives his answer he runs after the Postman. If the player cannot give a correct answer, he forfeits the heart to the Postman. Failure to catch the Postman means that the player must go to the post office (center of circle) and stay there.

The player catching the Postman has a turn to be Postman.

V

CHECKERBOARD

MATERIAL: Construction paper for folding and cutting. Scissors and colored crayons. Tag board and rulers.

OBJECT: To develop rapidity in solving problems in the four arithmetical processes. Experience in measuring with a ruler. Learning to count inches.

PROJECT: Let each pupil cut a sheet of construction paper into two four-inch squares. Fold each square into sixteen squares. Cut the sixteen squares along the folded lines. This makes thirty-two one-inch squares. Fold sixteen of these squares in halves and cut along the folded line. This makes thirty-two oblongs.

Divide a five-inch piece of tag board into sixteen squares. This is called a checkerboard.

Fold an envelope of construction paper to fit the checkerboard. Keep the small squares, oblongs and checkerboard in it.

GAMES: Teacher dictates numbers, as 2, 7, 12, 9, 8, 20. Pupils write a number with crayons in the lower half of each square.

1. For number recognition.

Leader calls a number. Pupils cover the number with a square. The pupil or pupils first covering all the numbers on the checkerboard wins the game.

2. For addition or subtraction.

Leader gives a combination, as $8-2=?$ Pupil covers 6 with a blank square. The winners are the same as for Game 1.

3. Number recognition, or the four arithmetical processes at the blackboard.

Draw a checkerboard on the blackboard. Let the pupils form a line. Each pupil in turn may erase the correct answer to the problem given by the leader.

4. Competitive drill.

Draw two checkerboards on the board. Place

0	66	36	
72	24	48	42
12		6	
56	30	18	60

60	18	30	
12		6	56
0	66		36
42	48	24	72

numbers in each square. If the multiplication table of 6 is to be drilled, use these diagrams: Two competitive lines of pupils stand at the board. An eraser is given the first child in each row. Teacher asks $6 \times 9 = ?$ First child in each row erases the correct answer. If a player fails, he takes his place behind the last player in his row and waits another turn. The successful players return to their desks.

The row succeeding in first erasing all the numbers wins the game.

5. Multiplication drill at desks.

Leader says 12. Pupils write $4 \times 3 =$ on an oblong paper and place it on the checkerboard above the 12. Leader calls 6, 42, 24, etc.

$4 \times 3 =$
12

6. Division drill at desks.

Leader calls $8 \div 2 = ?$ or how many 2's in 8? Pupil places blank oblong on checkerboard above

4. Continue playing.

VI

CROSSING THE OPEN BRIDGE

MATERIAL: None.

OBJECT: To teach recognition of number symbols; to drill column addition, and division and multiplication facts; to teach yards, feet and inches by actual measurement; to develop the sense of distance and physical poise.

PROJECT: Mark a bridge upon the floor, using chalk to outline the planks. Make planks 3 ft. \times 1 ft. and 2 ft. apart. Number each plank.

Open Bridge

	16		20		32		28	

GAMES: 1. Drill in column addition by score keeper. Drill in number recognition by player. Player calls number of plank as he jumps upon it. Child

at the board keeps the score. A player falls in the water if he fails to jump upon a plank (or call the number) and hence cannot play. The player jumping all the planks has a turn to be next player's score keeper.

2. Addition drill by player.

Each player adds his score as he jumps. Failure to jump or add correctly means loss of turn.

3. Drill in multiplication or division.

Place such numbers as 16, 20, 32, etc., upon the planks. Player must call $4 \times 4 = 16$ before jumping to next plank. If division is drilled he calls $16 \div 4 = 4$.

4. Competitive drill in addition, multiplication or division. Draw two bridges. Choose two players to compete. Use the same numbers for both bridges. One player begins at the right end and the other at the left end of the bridge. This prevents repeating the opponent's answer. The player jumping across first and correctly answering each number wins the contest.

VII

EASTER RABBIT

MATERIAL: Cardboard or stiff paper. Crayons.

OBJECT: To test and drill number combinations in the four arithmetical processes. To teach color recognition.

PROJECT: Pupils cut out and color eggs of cardboard. Color eggs on one side. Write a number combination on the uncolored side.

GAME: A pupil is chosen to be the Rabbit. He takes the basket and hops to each child's house (desk) and gives him an egg. The child keeps the egg if he can tell the correct answer to the number combination written on it.

The Rabbit goes to another child's house and gives him an egg. He continues going from house to house until all the eggs have been distributed.

Another Rabbit is chosen and other eggs placed in the basket.

VIII

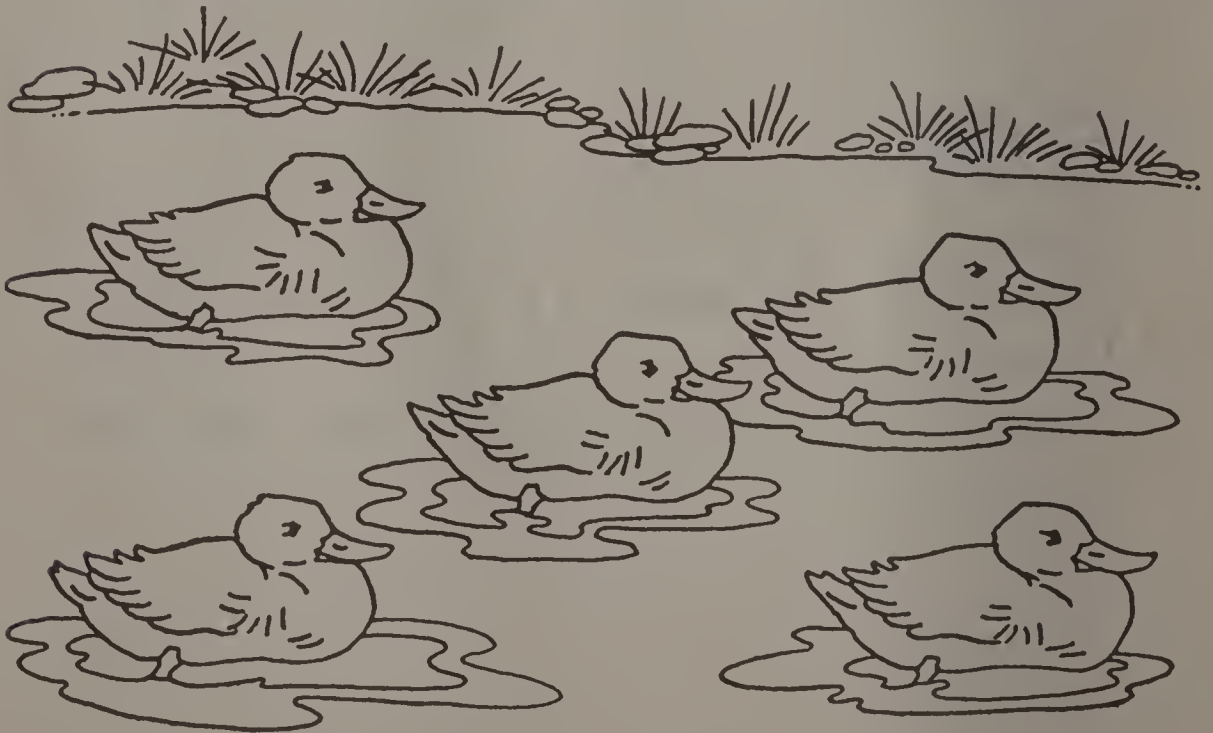
DUCK POND

There was a little man
And he had a little gun
And his bullets were made of lead, lead, lead;
He went to a brook
And aimed at a duck,
And shot it through the head, head, head.—*Mother Goose*

MATERIAL: Ducks cut from paper. Stick for a gun.

OBJECT: Counting by ones, twos, threes, etc.

PROJECT: Cut ducks from paper. Make a duck pond on the blackboard or in the sand table. Arrange the ducks in promiscuous fashion in the pond.



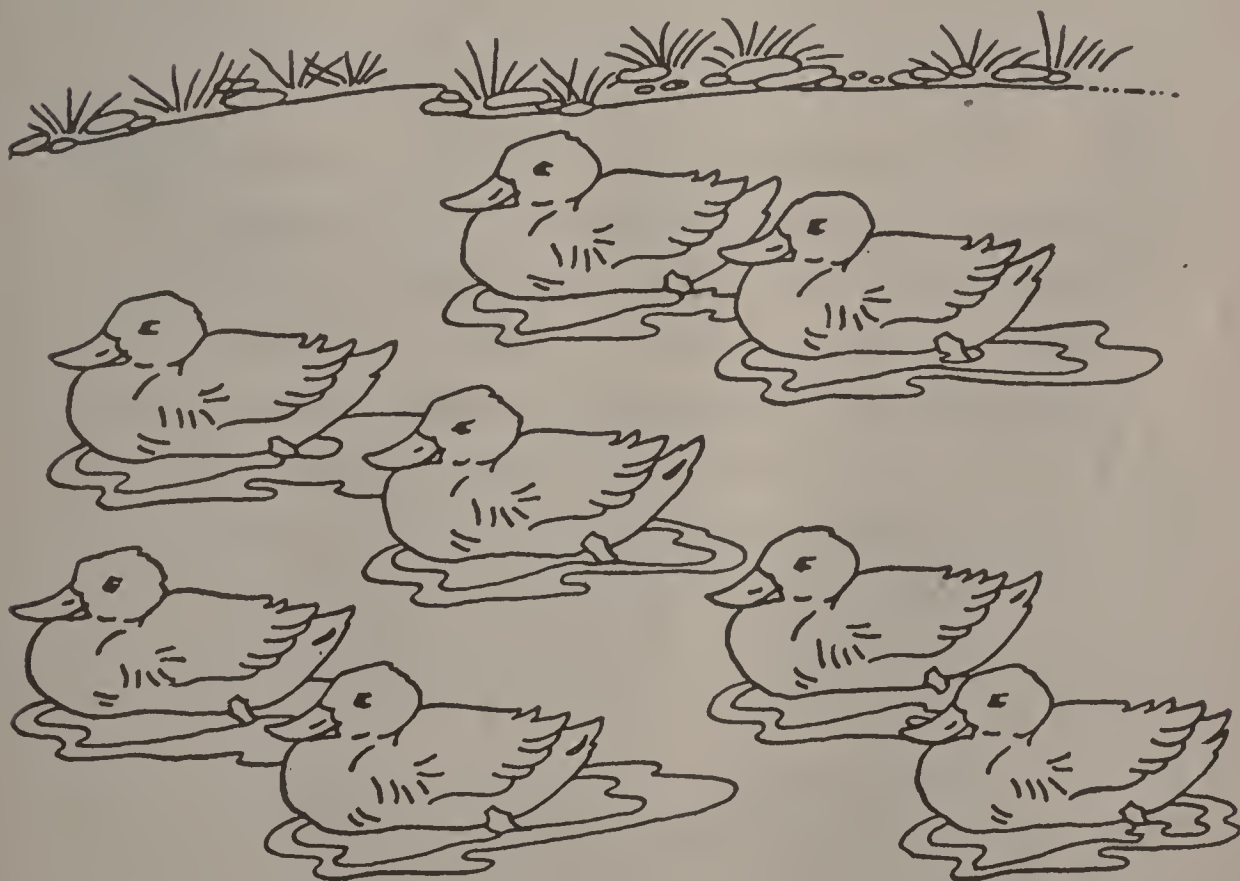
GAMES: 1. The pupil takes the gun and touches each duck and counts. He shoots as many ducks as he touches and counts.

2. Counting by twos.

Arrange the ducks swimming in pairs or in twos. Pupil counts 2, 4, 6, 8, etc., ducks.

3. Counting by threes.

Arrange ducks swimming in threes. Pupil counts 3, 6, 9, 12, etc., ducks.



IX

EGG HUNT

MATERIAL: Stiff white paper or cardboard for cutting.

OBJECT: Counting and sorting. Number recognition. To develop ability to think rapidly.

PROJECT: Cut eggs from a pattern or free hand. Color on one side with crayons. Write a number combination in any of the four arithmetical processes on the uncolored side of the egg.

GAME: Choose a Rabbit to hide the eggs. Choose about seven pupils to hunt for the eggs. They leave the room while the Rabbit is hiding the eggs and later return to hunt for them. Each player counts his eggs after all have been found. They may also tabulate them according to color. In order to keep his eggs, each player must solve correctly the number combination found on his eggs. He gives to the Rabbit the ones he does not know.

The player keeping the greatest number of eggs is chosen to hide the eggs for the next group of players.

X

ENTER THE FORT

MATERIAL: Tag board cards, with a number written upon each card. Broomsticks or yardsticks for guns.

OBJECT: Drill in multiplication or division.

PROJECT: Build a fort of benches and chairs, or use part of the class to stand and form a fort. The guns are stacked near the fort.

GAME: Select any number of soldiers. Each soldier is given a card. This is the password or, in plain language, the pass number. One soldier stands on guard in front of the fort. The remainder enter the fort.

A would-be soldier approaches the Guard.

“Halt!” orders the Guard.

“I want to be a soldier,” replies the player.

Guard holds up a number card, as 36, and says, “This is the pass number—give me the counter-sign.”

“ $12 \times 3 = 36$,” replies the candidate.

“Salute! Enter the fort and be a soldier,” re-

plies the Guard. The new soldier salutes and is given a gun by the Guard. Both enter the fort. If the candidate gives the wrong answer, the Guard replies, "Enemy, move on." Another candidate comes up to the Guard. The Guard remains on duty until one candidate successfully answers the pass number. Then he enters the fort and chooses another Guard to take his place. When the fort is filled, the last Guard orders out all the soldiers. They march out, give the flag salute, sing "America," then drill and parade about the room. A patriotic march played upon the piano or victrola adds to the spirit of the game. The music may be played softly during the first part of the game.

XI

GOOD MISTRESS HEN

MATERIAL: Manila paper for cutting. Heavy crayon for marking.

OBJECT: Recognition of number symbols or drill in arithmetical facts, such as division, etc.

PROJECTS: 1. Cut eggs free hand. Mark a number on each egg and a plus or minus, etc., sign near each number.

2. Draw and cut out hens and chicken-coops.

3. Study food and manner of living of hens.

4. Make a list of different uses for eggs.

5. Emphasize their food value.

6. Find out the price of eggs.

7. Draw a picture of an egg crate, showing compartments or partitions. Number them.

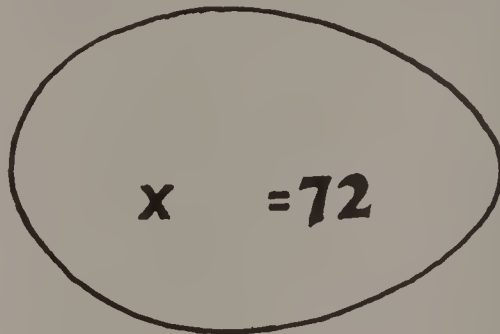
8. Make a carton or crate to hold a dozen eggs.

9. Make a basket of construction paper to carry eggs.

GAME: Choose a Hen. Place paper eggs in the nest. Choose any number of players to visit the Hen. The Hen is scratching or clucking near her nest. The child goes up to her and says, "Good Mistress Hen, have you an egg for me?"

“I have one,” answers Mistress Hen, hopping to her nest. “Tell me what it says.”

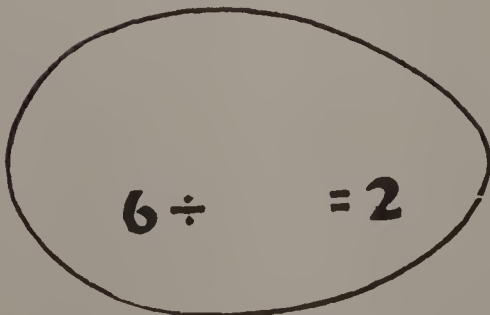
The child sees

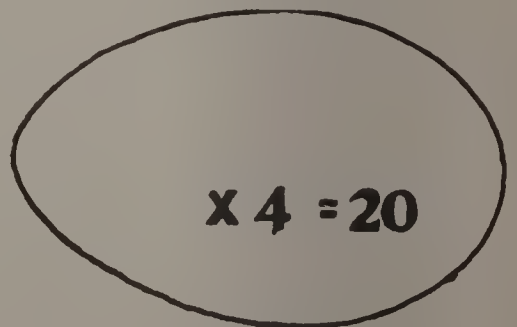

$$x = 72$$

He says $12 \times 6 = 72$.

The Hen hands the egg to the child, who says, “Thank you, Good Mistress Hen,” and runs home. If he fails to tell the combination, the Hen says, “I have none for you,” and places the egg back in the nest.

Another child visits the Hen and the game continues until all the eggs have been given away.


$$6 \div = 2$$


$$x 4 = 20$$

XII

HUNGRY PUMPKIN BOY

Make a Pumpkin Boy out of yellow paper. Paste on a yardstick. Stand him against a table and choose a child to impersonate him and hold the stick, if unstable.

Play the same as the Hungry Rabbit Game. Feed the Boy pumpkin pie [wedge-shaped pieces of paper marked with a number combination].



XIII

HELPING THE PURITANS

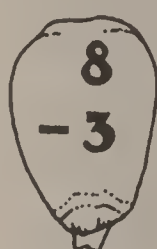
MATERIAL: Cut yellow paper into corn-shaped pieces. Write numbers or number combinations on each kernel.

OBJECT: Rapid drill in **any of the combinations.**
Dramatization.

PROJECTS: 1. Study the life of the early Puritans and note how the Indians helped them.
2. The first Thanksgiving feast.
3. The food the Puritans raised and harvested.
4. Study of corn and how it grows.
5. Assign groups to bring in samples of corn. If near rural districts, bring cornstalks.
6. Take a trip to see a field or garden of growing corn. Write an account of the trip.
7. How corn is used for man and beast.

GAME: Choose a Puritan and an Indian. The Puritan has a basket containing the paper corn. The Indian comes to the Puritan and asks: "May I come to your Thanksgiving feast?" The Puritan replies: "Yes, if you will show me how to plant my corn."

The Puritan hands the Indian the corn. The Indian takes a kernel and reads the combination on it, as:



The Indian shows the Puritan how to plant the corn in his field (sand table.) He then takes another grain of corn, reads the combination and plants the grain. This continues until all the corn has been planted.

If the Indian fails to tell the correct answer the Puritan says, "You do not know how to plant corn and may not come to the Thanksgiving feast."

If the Indian tells all the answers correctly, the Puritan says, "Thank you. You know how to plant corn and may come to the feast."

Another Indian is chosen and the game is played again. Continue playing until all the would-be guests have played the game.

XIV

I KNOW SOMETHING

MATERIAL: None.

OBJECT: To develop rapid thinking.

PROJECT: None.

GAME: A Leader is chosen. He calls a pupil by name and says, "I know something about 7."

Pupil asks, "Is it $12-5=7$?"

"No."

"Is it $7 \times 1=7$?"

"Yes."

The pupil has three guesses. If he guesses correctly, he has a turn to be Leader. If not, the Leader calls another pupil and the game continues as before.

When the class is large and time must be conserved, the teacher may divide the class into two groups and appoint a Leader for each group.

This game should be played at the desks and will serve as a quiet game after a period of activity.

XV

LINCOLN, "THE RAIL SPLITTER"

MATERIAL: None. Draw several logs upon the blackboard as illustrated.

OBJECT: Rapid drill in any of the arithmetical combinations.

PROJECTS: 1. Bring pictures of Lincoln to school. Describe his early cabin home.

2. Study the log cabin and how the early settlers used and built their cabins.

3. Primitive materials used by settlers to cement the logs.

4. Bring names and samples of wood to school.

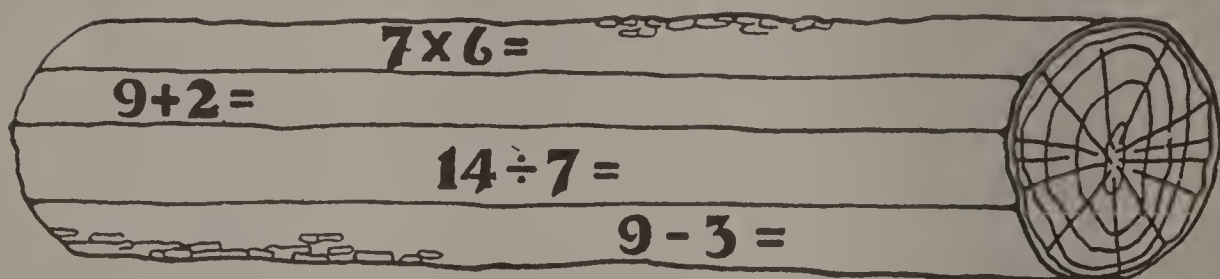
5. Build a miniature log cabin according to measure. Newspapers cut into eight-inch or twelve-inch squares, then rolled and tied together may be used for logs. The paper logs may be cemented with paste.

GAME: The teacher asks, "Who wants to play he can split rails as Lincoln did?"

A pupil volunteers. He is told to split as many rails as possible.

The pupil goes to the board and takes an axe (eraser) and says the combination on the first rail. If correct, he has split one rail. (He erases the combination.) He says the next combination. If correct, he has split two rails, etc.

He continues until all the rails have been split. When a pupil fails to say a combination correctly, he has failed to split a rail. Choose another pupil to take his place.



XVI

MR. SPOOL TEDDY BEAR

MATERIAL: Any number of empty spools. Teddy Bears cut from paper. Numbers cut from calendars. Hard rubber or wooden balls.

OBJECT: To teach recognition of number symbols, also addition and multiplication of two or more numbers.

PROJECT: Paste a number to the side of each spool. On the opposite side paste a Teddy Bear cut like this.



GAME: Make one or two rows of Teddy Bears on the floor. Draw a guard mark upon the floor. Children form a line. Each child stops at the guard mark and aims his ball at a Teddy Bear. The child calls the number he struck, or he may add or multiply the numbers if he knocked over more than one. The highest number wins.

XVII

MULTIPLICATION BEAR

MATERIAL: None.

OBJECT: Rapid number drill. Opportunity for many pupils to play in a short allotment of time. Test of pupil's ability and knowledge.

PROJECTS: 1. Draw a given number of bears. Make number-story pictures of bears, as 4 bears + 3 bears = 7 bears.

2. Study the habits of bears.

GAME: Let the class form a circle. A child is chosen for Mr. Multiplication Bear. The Bear runs around the outside of the circle. He stops, taps a child on the shoulder and says, "Gr-Gr. I am Multiplication, or *Times* Bear. Four 6's."

If the player replies "24," he is free. If his answer is incorrect, he is caught and must go into the Bear's den—the center of the ring. The Bear may change the problem and say "24."

The pupil then must give a combination of numbers resulting in 24. This game may be changed to any of the other arithmetical processes. The

Bear will then call himself Mr. Plus Bear, or Mr. Addition Bear, etc., according to the process to be taught. He may also change his identity for each child and test the pupils, one after another, in the four processes. The pupils are kept constantly on the alert by this method and monotonous drill is avoided.

XVIII

NUMBER BALL

MATERIAL: Any number of balls.

OBJECT: To develop subtraction through play.

PROJECT: Bring different kinds of balls to school.
Name materials used in making balls.

GAME: The pupils form a ring. Place a number of balls in the center of the ring. The children count the balls before singing. Choose a child to turn his back toward the balls or else hide his eyes. Another child is chosen to hide or take away any number of balls. The first child tells how many were taken away. If correct, he may hide the balls and choose some one to take his place in the ring.

1. The class sings to the music of *Farmer in the Dell*.

Nine balls are in the ring,
Nine balls are in the ring,
Sing—sing—oh—sing—sing,
Nine balls are in the ring.

2. A child tells how many were taken away.
Class sings.

Three balls have left the ring,
Three balls have left the ring,
Sing—sing—oh—sing—sing,
Three balls have left the ring.

3. A child tells how many stayed or were left
in the ring. Class sings.

Six balls stayed in the ring,
Six balls stayed in the ring,
Sing—sing—oh—sing—sing,
Six balls stayed in the ring.

XIX

NEW YEAR'S SURPRISE BOX

MATERIAL: A cardboard box filled with:

1. Colored cards containing number combinations or
2. Marbles,
3. Sticks or toothpicks in bundles of twos, threes, fours, etc.
4. Any material the teacher may find useful.

OBJECT: 1. To teach simple counting by ones.

2. To teach counting by twos, threes, etc., or, in other words, multiplication facts.
3. To teach any number combination.

PROJECTS: 1. Write the New Year and date of the month.

2. Note facts of interest in the old year. (The youngest children will remember coming to school in September, the Fall, Thanksgiving, the first snow, Christmas, etc.)
3. Write a list of pleasant things the old year did for you. (For older groups.)
4. Write a list of what you want to have the New Year help you do. (For older groups.)

GAMES: 1. Pupils form a circle. A child is chosen to be Little New Year. He is given the Surprise Box. He runs outside the circle with it. Then he stops behind a pupil and knocks on the floor.

CHILD. Who are you?

LITTLE NEW YEAR. I am Little New Year.

CHILD. What have you?

LITTLE NEW YEAR. A Surprise Box for you. Let me in.

CHILD. Come in.

Little New Year runs in front of the child and offers him the box. The child takes the box and opens it. He takes out a card with $4 \times 7 =$ on it. He quickly says "28." The box is his and he then plays he is Little New Year. If the child fails to tell the correct answer, he forfeits the box.

2. After the conversation in the previous game, the child opens the box. This time the box contains marbles. He takes out a marble and says, "One." He takes out another and says "Two."

If he can count all the marbles, the box is his and he can play he is Little New Year. (This game is a help for beginners.)

3. After the conversation in Game 1, the child opens the box and finds two colored sticks fastened together with a rubber band. He counts 2 and then takes out another bundle of sticks (2) and counts 4. He continues counting by twos until the box is empty.

NOTE: Any material may be used in these games. If three or four are to be drilled in counting or multiplication, the sticks should be placed in bundles of threes or fours.

XX

NUMBER PIE

Little Jack Horner
Sat in a corner,
Eating a number pie.
He put in two thumbs
And pulled out some plums,
And said, "What a fine number pie!"

MATERIAL: A tin pie plate. Brown wrapping paper.
Paste.

OBJECT: Counting for beginners. Drill in the four arithmetical processes. Recognition of the signs used in connection with the processes. Dramatization.

PROJECT: Cut plums of brown paper. Put one addition, subtraction, multiplication or division sign on each plum. The number of signs should be equal. Put a number on the opposite side of the plum.

Measure the top of the pie and cut a circular brown paper cover for the crust. Paste around the edge of the pan. Cut a two-inch slit in the

center of the top crust for the fingers to slip in. If division is to be stressed, fill the pie with plums having the division sign on them. The same for the other three processes.

For Game 1 it is not necessary to number the plums.

GAME: 1. A child is chosen to be Jack Horner and he sits in a corner. At the words, "put in two thumbs," he pulls out as many plums as he can at one attempt.

Jack counts the number and writes the amount on the blackboard. This helps the pupil to learn number in the concrete, and to recognize and make the symbol for the number.

After several children have played, the class may decide from the numbers on the board who found the greatest number of plums. Allow several children to count the plums if they are uncertain as to the highest score.

Actual doing is more important than observation in this game. A pupil may add the total number found. The addition may be verified by the class or by several pupils counting the plums and comparing the results.

2. Multiplication Drill.

When multiplication facts are to be drilled, vary the words of the rhyme and call the pie the “three-times” or “two-times pie.” If a girl plays, call her Miss Horner and change the rhyme accordingly.

Little Miss Horner
Sat in a corner,
Eating a three-times pie.
She put in her thumb
And pulled out a plum
And said, “What a fine three-times pie!”

Each plum is marked with a number, as 3, 6, 9, 12, etc. If the pupil pulls out the plum marked 18, she quickly replies: $3 \times 6 = 18$. If she cannot tell the answer, she places the plum back in the pie.

If she answers correctly, the plum is hers and may be taken to the desk. She then chooses a boy to be Jack Horner.

After all the plums have been taken from the pie, the class calls 3, 6, 9, 12, 15, etc. The child holding the proper number plum runs to the front of the room when his number is called. A big pie is formed (a circle) with the plums in proper order.

Then the child having 3 says " $3 \times 1 = 3$," and runs and places his plum back in the pie. The child having 6 says, " $3 \times 2 = 6$ " and does likewise. Continue until all the plums have been placed in the pie.

Begin a new game with new players.

XXI

PASSENGER TRAIN

MATERIAL: Tag board for cutting into cards.

OBJECT: Drill of division or any of the four arithmetical processes. To stimulate the slow pupil.

PROJECTS: 1. Make tickets of tag board. Cut $2\frac{1}{2}$ by $1\frac{1}{2}$ inches.

2. Mark a number combination on each ticket, such as $16 \div 4 =$.

3. Draw a large passenger train on the blackboard.

GAME: Draw a train of cars on the blackboard. Place chairs along the blackboard near the train. Arrange as in a train.

Passengers are chosen, also a Ticket Seller, a Conductor and Brakeman.

The passengers buy tickets from the Ticket Seller, get on the train and sit on the chairs.

The Conductor comes through the car and collects tickets.

He asks each passenger, "Where are you going?"

A passenger, looking at his ticket, which says $24 \div 4 =$, says, "I am going to 6."

The Conductor looks at the ticket; if the answer is correct, he takes a number of blank tickets from his pocket, marks one with a 6 and gives it to the passenger.

If the passenger fails to give the correct destination (answer), the Conductor says, "This train is not going there." He stops the train and the passenger must get off and walk home. When all the tickets have been collected, it is time for the Conductor to call out stations. He examines the collected tickets. Suppose he sees $24 \div 4 =$, instead of saying or calling, " $24 \div 4 = 6$," he makes a new combination of numbers with 6 for the result. He calls " $\text{Station } 3 \times 2$ " or " $\text{Station } 2 + 4$," or " $\text{Station } 12 - 6$."

The passenger who has Number 6 ticket jumps up and gets off at Station 6. If the passenger fails to recognize his station (the combination), the Conductor steps up to him and says, "You must pay a forfeit." He calls the Brakeman, who gives him a card containing problems resulting in 6.

The passenger works his problem on the train and when finished hands it to the Brakeman or Conductor. If correct, he can get off at the next station. If not, he keeps on trying until the train goes to the "yards," where he must pay another forfeit or go to prison.

The pupils like this game very much and will work to keep out of prison. The slow pupil is usually stimulated to speed up his work.

The cards and tickets may be kept from one day to another and new ones added when new combinations are to be drilled.

STATION

$$24 \div 4 =$$

STATION

$$3 \times 2 =$$

XXII

POST OFFICE

MATERIAL: Used envelopes. Paper for making envelopes. Heavy crayons. A postal card rack.

OBJECT: Recognizing number combinations. Drill of same.

PROJECTS: 1. Make envelopes of paper cut to a definite size.

2. Make sets of number combinations by placing one combination on each envelope.

GAME: Choose a Postman. Place the envelopes in irregular order (irregular according to the combinations) in the postal card rack.

Choose a child to go to the post office. The child asks the Postman, "Any mail for Susan Twelve?"

"Yes," replies the Postman, "You will find your letters in the rack."

The child selects all the envelopes marked with number combinations making twelve. These need not be all in addition, but may include a

few subtraction, division or multiplication problems.

Susan Twelve hands the letters to the Postman for his inspection. Those not correct the Postman replaces in the rack.

The child takes the letters to her desk.

Johnny Fourteen, or any number, may go for his mail.

Two or more children may go together to conserve time.

XXIII

PUNCH THE TIME CLOCK

MATERIAL: A toy clockface. This can be obtained from publishing houses dealing in school supplies.

OBJECT: To learn the Roman numerals to 12. To tell time.

PROJECTS: 1. Make a list of different kinds of clocks.

2. Cut pictures of clocks and watches from advertisements. Mount upon cardboard and hang in the schoolroom.

3. Make pictures of clocks.

4. Construct a simple hall clock by folding a narrow oblong box and pasting it. Stand up on the narrow end. Make a round clockface and paste it on the clock. Cut a long door in the clock. Fasten a string to a cylindrical-shaped wooden bead. Hang it in the clock for a pendulum. String can be fastened or tied to the top of the clock on the inside.

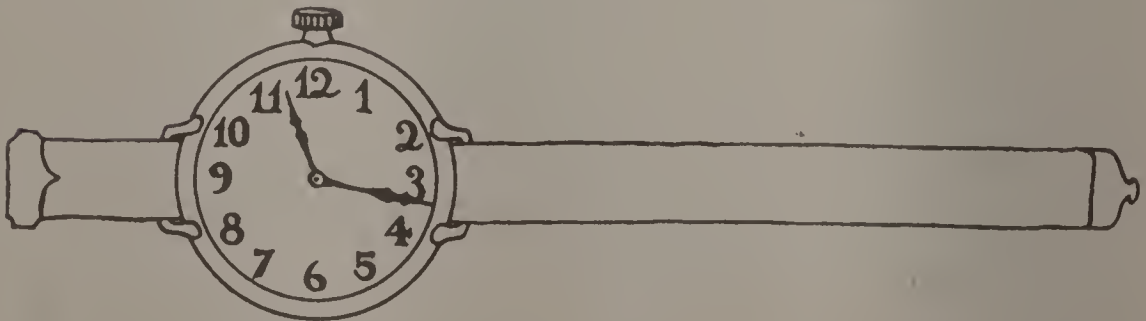
5. Make toy watches. Copy the face of the watch from the clockface used in school. Cover the

back of the watch with tin foil, silver or gold paper. Hang around the neck with a string.



Toy Watch

6. Make a wrist watch. Use gold or silver paper pasted on manila paper for the strap. Fasten with a paper clip.



7. Make a time-table for a train or street car.

8. Make a time schedule showing what time you

Arise in the morning.

Go to school.

Go home.

Eat lunch.

Play, etc.

Go to bed.

9. Make a time schedule for school activities.

First bell.

Tardy bell.

Late bell.

Changing classes for recitations.

Recess.

Dismissal.

10. Make a time schedule showing how you would like to spend a Saturday.

GAME: Hang the toy clock upon the wall. Choose a large number of pupils to go to work in a store, office, factory, mill, etc., depending upon the class of pupils in the school. If in a mill district, the time clock in the mill is most familiar.

The workers enter the mill and "punch the time clock." They look at the clock and write on a slip of paper the time entered and their names.

The slip is handed to the Timekeeper—the teacher will have to be Timekeeper until the pupils become proficient. If correct, the Timekeeper marks O. K. on the slip. If incorrect, the worker must go back and do it correctly.

When the workers pass out from work, they present a slip with their time of departure. For upper grades, Timekeepers may be appointed to figure how many hours' work was done that day. The two slips are compared and a statement handed the worker, who has to have it verified by the Manager (the teacher).

Pupils enjoy entering and leaving work early and late, or returning several times during the day. This of course affords opportunity for reading the clock often. After the pupils become proficient and can calculate the minutes, it is more worth while to use a real clock. The time not only varies for each pupil, but the time calculation seems more realistic.

XXIV

RAINBOW SPOOL

MATERIAL: Empty spools dyed with one of the popular dye products on the market. Use the six spectrum colors. A hard ball to roll on the floor.

OBJECT: To teach colors; special drill in multiplication and addition when necessary.

PROJECTS: 1. Pupils obtain the spools. Go to the store for the dye. Keep account of the amount spent.

2. Make a poster to show the numerical value of each spool according to color.

Red	2	Green	4
Orange	5	Blue	6
Yellow	3	Violet	7

GAME: Arrange the spools in the same position as used for Tumble Spool. Play in the same manner. If a player knocks over two yellow spools and one violet spool, he says $3 \times 2 = 6 + 7 = 13$. The highest score wins.

XXV

SANTA CLAUS' PRESENTS

MATERIAL: A Christmas tree, boxes, paper, string, pictures, heavy crayon.

OBJECT: Rapid statement of number facts or combinations in addition and multiplication for groups of pupils. Dramatization.

PROJECTS: 1. Bring small boxes to school and wrap them. Tie tags on pictures, paper dolls, animals, etc., for the tree.

2. Mark each package with a number and process sign.

3. Bring a Christmas tree to school and plan where and how to place it in the schoolroom.

4. Bring specimens of different kinds of evergreen trees to school, also pictures of the same. Make a list of the varieties. Draw pictures of all or some of them. Study their growth and habitation.

5. Make a large bag of cheap material for Santa Claus to carry on his visits.

GAME: Choose a Santa Claus. Let him make six piles of packages on the floor or table.

He may then choose six Brownies to help pack his bag.

Each Brownie must tell Santa Claus what is written on the packages in his pile. A Brownie selects a package with $+16$ on it. He says $9 + 7 = 16$, and hands the package to Santa Claus, who places it in the bag.

The Brownie is sent home if he fails to tell a correct combination. Then Santa Claus chooses another helper.

When the bag is packed, each Brownie runs home and chooses another Brownie to take his place. These new Brownies hop into Santa Claus' imaginary sleigh and ride to the schoolhouse to trim the tree.

Santa Claus gives a package to a Brownie. If the Brownie can tell the correct combination, he is allowed to hang it on the tree.

If not, he must run home through the snow for another helper.

When the tree is trimmed, Santa Claus drives off with his helpers, the Brownies. A group of children are chosen to come to the tree and select a Christmas package. The children telling the correct combination are allowed to take their gift home (to the desk). Those failing do not receive a gift.

XXVI

SAVE THE CHILD

MATERIAL: Blackboard and chalk.

OBJECT: Rapid drill in multiplication and addition.
Counting and reading of numbers.

PROJECTS: 1. Draw on the blackboard a picture of a fire-alarm box. Place a number on the box. Nearby draw several houses. Place a number above each door. Draw a picture of a child standing at one of the second-story windows.

2. Cut ladders of paper. Write number combinations on each rung of the ladder.

GAME: Choose a Fire Chief and several Firemen. A house catches fire. (Teacher or pupil draws flames.) A child runs to the fire-alarm box and turns in an alarm. He or another child strikes the proper number on a bell, or any piece of metal. If 8 is marked on the box, he of course strikes 8.

The Fire Chief and the Firemen rush to the fire. The child who turned in the alarm informs the Chief that house number 256 is burning.

The Fire Chief exclaims, "Save the child!"

Firemen line up near the burning house. The Fire Chief places a ladder near the window. A tiny dab of paste will hold the ladder on the board.) The first Fireman plays he is climbing the ladder and repeats the number combinations written on each rung. He rescues the child (if he can say every combination correctly.) (Erase the picture of the child.)

If the Fireman fails to give the correct answer to a combination, he is said to have slipped from the ladder.

Another Fireman takes his place.

The Fire Chief exclaims, "House 257 is burning." The child is rescued from that house by the second Fireman.

At the conclusion of the game the house burns down (is erased).

COMPETITIVE GAME: 1. Two houses may burn and two Firemen attempt to rescue the children, one Fireman for each house. The Fireman first saying all the combinations correctly, rescues the child and is the hero. He may run to the other burning house and attempt to rescue that child before the slow Fireman does so.

2. Two Firemen may attempt to rescue the same child. Each Fireman, in turn, puts up his ladder and makes the attempt.



STORE GAMES

The familiar game of Grocery Store may be varied pleasingly by introducing special stores throughout the year. The pupils like old games dressed up as new. The variety and novelty of the game increases the pupils' interest and provides an impetus for greater motive power and creative ability.

These new store games (XXVII to XLI inclusive) are adapted to the project method of teaching and can easily be developed as interesting and instructive material.

After a series of Store Games have been planned and successfully carried out, it is an excellent plan to announce a definite day for a special store.

The pupils enjoy the anticipation. It is an inducement for the collecting of more material and an aid in the orderly organization of the teacher's program.

At a certain stage in all the store games it is well to encourage the customers to pay too much and receive change. This is a help in addition and subtraction.

XXVII

APPLE ORCHARD

MATERIAL: A small bale of cotton. Red, yellow and green tissue paper. Three or four small tree branches. String for tying. A half-peck and a quarter-peck measure; also a bushel basket if available.

OBJECT: To teach dry measure terms, the dozen, and division.

PROJECTS: 1. Make apples for the tree. Cut the tissue paper into three-inch squares. Place a small wad of cotton in the center of the square. Crush the paper around the cotton and tie at the top for an apple. Hang on the tree branches to make the apple tree. Any number of trees may be used.

It will be found practicable to utilize the sand table and stick the branches in the sand. The trees may be arranged in rows, a given number in each row.

2. Make a price sign for the orchard.

Apples**25¢
dozen****Apples****50¢
peck**

3. Study varieties and colors of apples. Also their development and growth.
4. An excursion to an orchard.
5. A written or oral report of the same.

GAME: A pupil is chosen for the Farmer. The Buyer goes to the farm or orchard. He reads the price sign. He selects his apples. The Farmer allows him to measure his apples, if he is buying by dry measure. If by the dozen, he counts the apples and the Farmer verifies his count. He pays the price with toy money, or he can write a check, as in the Ready-to-Wear Store Game (XXXIX).

XXVIII

BAKERY SHOP

MATERIAL: Pictures of pies, cakes, muffins, cookies, bread, etc. Cardboard or tablet backs. Paste. Tag board.

OBJECT: To teach counting of objects and the four arithmetical processes through play. The term *dozen*, also names of coins used in paying for purchases.

PROJECTS: 1. Pupils cut and mount pictures of pastry found in the advertisement section of well known magazines.

2. Make price tags of tag board.

3. Visit a bakery shop.

4. Write or relate the trip.

5. The materials used in bread making.

6. Different kinds of flour.

7. Trace the grain from the field to the mill.

8. Model cakes and bread out of modeling clay.

9. If possible, make arrangements with the Domestic Science teacher for the use of her room

in order to give the class an experience in actually making and baking biscuit or cake.

GAME: The opening of the store is a great event. Not only are the pictured eatables displayed upon the blackboard sill, but upon a table or desk are found wonderful, enticing boxes (empty of course), of a popular brand of cakes. Upon another table are shown wax paper bread wrappers looking as if the bread were ready to be taken out of the wrappers.

The pastry shop requires one Shopkeeper and a Clerk for each counter or table, thus giving more than one child a chance to work in the shop, boys and girls playing together.

Each Clerk wears a white apron brought from home, or made at school out of a clean dusting cloth or white crepe paper. The Shopkeeper or Owner wears a white cap made of paper.

The Clerks mark the prices as suggested by the Shopkeeper. Prices are marked on the blackboard above the pictures, and placed upon tags upon the boxes and bread. This is an excellent aid in the recognition and writing of numbers for beginners.

The customers select their bread, etc. The Clerk makes a bill and the customer pays with toy money.

Bakery Shop	
Clerk No. 9	
Dec. 1, 1927	
Sold to (Name of Child)	
1 Cake @ 50 ¢	
2 Pies @ 30 ¢	
3 Buns @ 16 ¢ doz.	
4 Rolls @ 24 ¢ doz.	
$\frac{1}{2}$ Lemon Cake @ 40 ¢	
$\frac{1}{4}$ Apple Tart @ 20 ¢	

XXIX

CANDY STORE

MATERIAL: Jars for toy or make-believe candy.

Waxed and tissue paper. Buttons, bits of wood, chalk, thick pegs, etc. Empty candy boxes and cartons. A pair of small scales.

OBJECT: To teach pounds and ounces through the use of scales. Also the term *dozen* and *fractions of a dozen*. Counting and use of money.

PROJECTS: 1. Plan a candy store. Use the front desks, the kindergarten table and the window sills for display counters.

2. Pupils collect candy boxes and fill with thick pegs or small pieces of chalk wrapped in colored waxed paper. Cut each paper according to a definite size.

3. Small buttons may be wrapped in tin foil and placed in glass jars. Clothespins wrapped in colored tissue paper make attractive “sticks of candy.”

4. Kernels of corn and acorns wrapped in paper and placed in a large can or box make ideal candy for weighing.
5. A cornucopia made of paper and filled at the top with cotton makes a fine "ice cream cone."
6. Make paper bags for candy. Cut the paper 8 x 6 inches, fold in half and paste along the two sides.
7. Let the pupils mark and label the candy jars, etc.

GAME: Played the same as the other store games.

XXX

CASH REGISTER

MATERIAL: Toy money or different sized buttons with paper marked 1c, 5c, 10c, or 25c, etc., pasted on them. A toy cash register. If not available, a box divided into various compartments will serve.

OBJECT: Recognition of coins and bills through usage.

Proper placing of the dollar and cent marks.

Training in classification.

Multiplication and column addition.

Coöperative group work.

Busy work for single groups.

Following directions and carrying out an assignment.

PROJECTS: 1. Assign a group to investigate the use of a cash register. A friendly and interested patron of the schools who is in business will no doubt consent to a visit to his store for this purpose.

2. Divide the class into groups and ask each group to list as many business places using cash registers as possible.

Cash Register Receipts

Coins						Paper Money					
Penny	Nickle	Dime	Quarter	Half Dollar	Dollar	\$ 1	\$ 2	\$ 5	\$ 10	\$ 20	\$ 50
97	127	239	132	57	178	87	32	6	12	6	3
Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total

3. Assign a group after a store game to take account of the money in the cash register and tabulate it as illustrated.

4. Groups are later assigned as accountants. They count each sum of money itemized and check the correctness of the statement of the group assigned to Project 3. For instance:
 First group counts and verifies the pennies.
 Second group counts and verifies the nickels.
 Third group counts and verifies the dimes.
 Fourth group counts and verifies the quarters.

GAME: The game is disguised as Projects 3 and 4.

XXXI

FLORIST'S SHOP

This is an excellent game for spring or fall, when real flowers can be obtained. In winter artificial or pictured flowers and plants may be used. Use small scales for weighing.

MATERIAL: Real or artificial flowers. Pictures of flowers. Jars and vases for flowers. Seeds and acorns.

OBJECTS: 1. To teach the use of the word *dozen*, and *fractions of a dozen*.

2. To teach buying and selling through the use of toy money.

3. To teach *ounces* and *pounds* by actual weight, using the bulbs and seeds.

PROJECT: Collect flowers; study their plant life, names and colors. What flowers bloom during the different seasons. Collect seeds. Plant seeds and take care of them. Watch growth of plants.

1. Plant geranium slips and grow in the school-room.

2. Measure the height of various flowers.
3. Find the smallest leaf, the largest leaf and measure them in inches.
4. Count how many different flowers grow in the woods.
5. Count how many grow in your garden or your neighbor's garden.
6. Make play bulbs for the store. Take a wad of cotton and wrap a $2\frac{1}{2}$ -inch square piece of brown paper around it. Tie at the top. Use for hyacinth bulbs in the store.
7. Find acorns and use for make-believe crocus bulbs.
8. Select a group of pupils to arrange the flowers. Another group to label them and a third group to mark the prices. Prices should be so calculated that they can be divided evenly for fractions of a dozen.

GAME: Select a Florist and one or two Helpers. A group visits the shop and buy the flowers. Encourage pupils to buy $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{6}$ of a dozen. The Florist must calculate the price according to the price per dozen. A buyer selects and counts

his choice of flowers; he pays with toy money. He may receive a bill for his purchase.

All bulbs should be sold at dozen rates and the fraction of a dozen calculated by the Florist or Clerk. Seeds may be sold by weight or package.

XXXII

FLOWER GARDEN

MATERIAL: Sand table. A flower catalogue. Tooth picks and twigs. Toy money.

OBJECT: Special drill in division and *fractions of a dozen*. Drill in multiplication. Counting money. Recognition of flowers. Spelling names of flowers.

PROJECTS: 1. Make a flower garden. Cut flowers from the catalogue. Cut flowers free-hand. Paste the short-stemmed ones on tooth picks, the tall flowers on long twigs.

2. Study varieties of flowers, tall and low ones, also colors of flowers.

3. Arrange in the flower garden according to variety. If the flower garden game is to be played for several weeks, it will be interesting to sow grass seed or wheat in the garden to add to the realism.

4. Make small price signs according to measure; $4\frac{1}{2}$ x 3 inches is large enough. Paste on sticks and place in the sand table among the flowers.



GAME: Appoint a Gardener. Several children visit the garden and select flowers. A child buys four roses. He asks the Gardener the price. The Gardener says, "One rose, 6 cents. Four roses, 4×6 cents, are 24 cents." Or he may multiply mentally and say, "Twenty-four cents." The buyer uses toy money to pay the Gardener.

Another Gardener is chosen. This time the pupil buys a half-dozen asters. The Gardener allows the buyer to pick his asters. (To test the pupil's knowledge concerning how many in a half dozen.) The Gardener calculates the price on the basis of one dozen. Each buyer is allowed to take his flowers to his desk.

XXXIII

FIVE-, TEN- AND TWENTY-FIVE CENT
STORE

MATERIAL: Yard sticks for measuring. Materials found in a Five and Ten-Cent Store, such as

Dishes	Souvenir postal cards
Pans	Nails and tack boxes
Hammers	Buttons and thread
Toys	Candy boxes
Pictures	Ribbon paper
Books	Strings of beads

OBJECT: 1. To teach the terms *dime*, *nickel* and *quarter*. To drill multiplication facts with emphasis upon the 5 and 10 multiplication tables or combinations involved in the two tables.

2. To give an opportunity for group work to a large number of pupils. To keep pupils busy on profitable busy work while a section of the class is reciting.

3. To teach the terms width and length.

PROJECTS: 1. The class may take a trip to the ten-cent store. Pupils may then write lists of the merchandise seen there and the prices. Select one article from the list and bring to school for the store.

2. Make sales books out of scrap paper. Paste or sew together at the top.

3. Make toy nickels, dimes and quarters. Paper milk-bottle covers cut to the correct size may be used. Cover the coins with silver paper and paste and mark correct value on each.

4. Make a sign list of the various departments in the store, as

- | | |
|----------------------|-------------------|
| 1. Postal Card Dept. | 2. Souvenir Dept. |
| 9. Candy Dept. | 4. Ribbon Dept. |
| 6. Toy Dept. | 6. Hardware Dept. |
| 7. China Dept. | 8. Jewelry Dept. |
| 3. Dry Goods Dept. | 10. Music Dept. |

5. Number each department on the sign. Hang the sign at a prominent place near the store entrance.

6. Make signs for each department.

7. Arrange store according to departments.

8. Assign a Clerk to each department. Give a sales book to each Clerk. Put number of department on it.

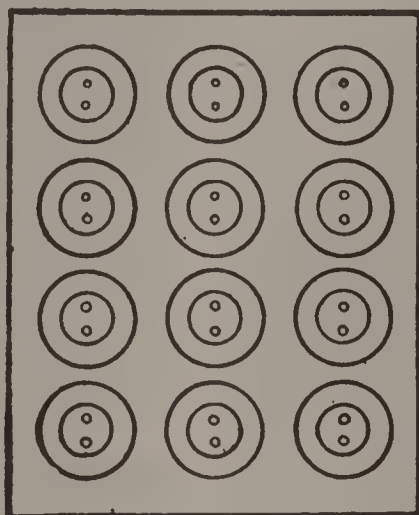
9. Obtain ribbon paper from department stores selling ribbon. This paper is wrapped with the ribbon around the spools or ribbon bolts. The material is useful for teaching width and length, as it varies according to the width of the ribbon. Often an interested clerk will save bolts and ribbon paper for school use upon request.

Printing establishments usually have an abundance of "ribbon paper" cut from margins and edges of paper. These strips are not so long as the ribbon paper obtained from department stores, but are useful in teaching short lengths.

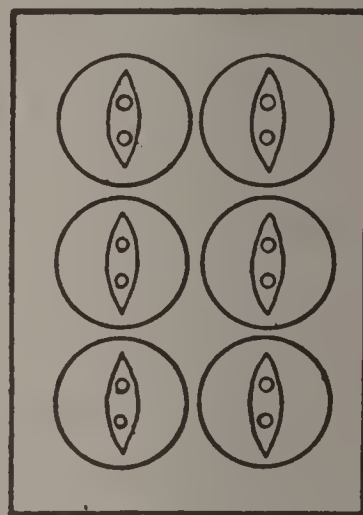
A wall-paper dealer cuts the edge from each side of the paper before using it. This is always narrow and comes in very long lengths. It represents waste paper to the merchant, but a gold mine of possibilities to the teacher. It can be used also as lace for the dry goods department.

10. Measure the ribbon paper and roll it around the ribbon spools or bolts.

11. Design patterns for fancy ribbon and for lace.



Pearl Buttons
50 cts. doz.



Buttons
25 cts. doz.

Hardware
nothing
over
5, 10, 25 cts.

Lace
Narrow width
5 cts. yd.

Nothing
over
5-10-
& 25 cts.

Wire
2 ft. for 25 cts.

Use the wide widths. The class may draw colored patterns in border fashion on the strips of paper.

The colored patterns can be made very attractive and will be in great demand in the toy store.

Paper Ribbon Designs



Price 10 Cts. Yd.

Price 25 Cts. Yd.

12. Sew a dozen or half-dozen buttons on a card.

If buttons are not available, pupils may cut different sized and colored buttons out of colored paper or thin cardboard. Paste on cards. Mark two or four small dots for holes in each button.

The early beginner will enjoy coloring buttons cut from manila paper and pasting them on cards. The buttons may be made in different sizes and shapes.

Small button molds are inexpensive and can be used also.

13. Make price signs for the merchandise.

GAME: A pupil enters the store and consults the sign list for the department he wishes to visit.

A Floor Walker stationed near the door may help him if necessary.

The pupil makes his selection. The Clerk calculates the price. He may give the pupil a sales slip or bill. The buyer pays with toy money in nickels, dimes or quarters. He takes his purchase home. Encourage making change.

Candy Dept. No. 9	Souvenir Dept. No. 2	Ribbon Dept. No. 4
Toy Dept. No. 6		

XXXIV

FRUIT STORE

MATERIAL: Pictures of fruit. Yellow, orange and red tissue paper or thin cheesecloth. Cotton wadding.

OBJECT: To teach and demonstrate in a visual and practical manner the term *dozen*, as well as *fractions of a dozen*. Distinguish form, color and names of fruit.

PROJECTS: 1. Arrange a fruit store. Cut pictures of fruit from advertisements, seed and nursery catalogues. Mount and display upon the blackboard for the store.

2. Make toy fruit as described in the Apple Orchard Game.

3. Mark the price of the fruit on signs. Cut signs according to a definite measure.

4. Learn where oranges, lemons, bananas, etc., grow.

5. How the fruit travels or is shipped to the fruit dealer.

GAME: The Clerk marks the prices of the fruits according to the dozen. The customer purchases a fraction of a dozen and the Clerk calculates the price, the customer verifying the correctness of his statement. Use toy money. The prices of the fruit for beginners may be marked according to the price of the individual fruit. This aids in making multiplication more concrete, for the cost must be calculated by the Clerk by multiplying the price of one item of fruit by the number purchased. This avoids monotonous multiplication drill.

<p>Oranges 39 cts. doz.</p>
--

XXXV

LEMON GROVE

This game is played the same as Orange Grove. Cut lemons and hang on the tree. The Object and Project are the same as for the Orange Grove, the lemons taking the place of oranges.

**25 cts.
for
Lemons
a doz.**

XXXVI

MILK DEPOT

MATERIAL: Glass milk bottles in the half-pint, pint, and quart size. The sanitary paper cartons used by some milk dealers are also very useful. Sand or sawdust for measuring. Water is the most desirable and practical thing to use to represent milk, when care is taken to prevent spilling.

OBJECT: To teach liquid measure by actual usage and measurement. Also the terms used in the same, such as *half-pint*, *pint*, *quart* and *gallon*.

PROJECTS: 1. Trace the purchase of a bottle of milk from the dealer to the farmer and its source.

2. For older pupils the proper care of milk by the farmer and dealer until it reaches the consumer.

3. Milk as a food for health and strength.

4. Plan and arrange a Milk Depot or section of a store selling milk.

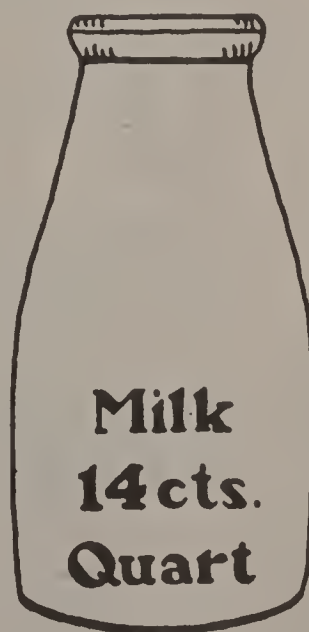
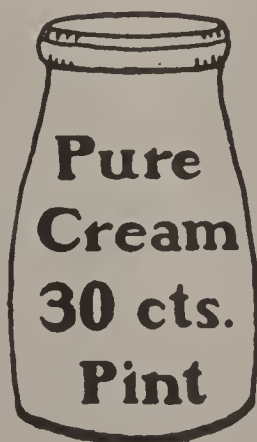
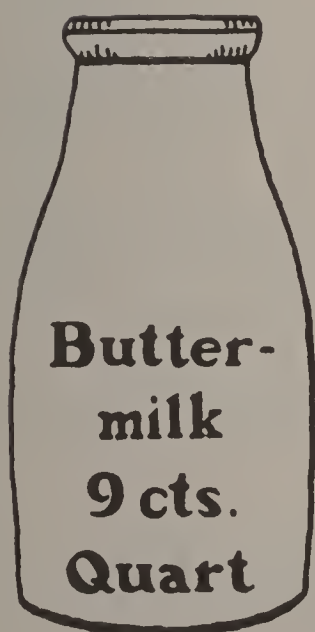
5. Make a price sign as illustrated.

6. Make a Good Health Poster with Milk as the topic.

GAME: Choose a pupil to sell milk. A number of pupils may go to the Dealer for their supply. The Dealer measures the milk into the bottles while the customer waits. The pupils pay with toy money.

Sometimes as a test allow the pupils to measure the quantity they wish to purchase. Also to calculate price for same.

Change the Milk Dealer often in order to give every pupil of the section of the class taking part a chance to measure the quantity and distinguish the difference in the sizes of pints, quarts, etc.



XXXVII

ORANGE GROVE

MATERIAL: Oranges cut from advertisements. A small branch of a tree. Sand table.

OBJECT: Drill in the terms *dozen* and *fractions of a dozen*.

PROJECTS: 1. Pupils find and cut out advertisements of oranges. Draw a thread through each orange and tie in a knot.

2. Pupils bring branches of tree. Hang oranges on the branches.

3. Make a large sign and place in the orange grove.

4. Find information through reading and pictures about how and where oranges grow.

5. Also how oranges are packed and shipped to distant cities.

6. Write an account of an imaginary trip to an orange grove.

7. An account of a trip to a packing house.

GAME: Play in the same manner as the Flower Garden. The buyer, purchasing a dozen or fraction of a dozen, picks the correct number from the tree.



XXXVIII

PEACH ORCHARD

This game is played the same as Apple Orchard. Pupils make peaches out of cotton and tissue paper. Object and Projects are also the same.

XXXIX

READY-TO-WEAR STORE

MATERIAL: Yardsticks and tape measures. Pictures of suits, dresses, blouses, coats, etc.

OBJECT: To teach more complicated measuring and the terms *inches*, *feet* and *yards*.

PROJECTS: 1. Arrange a Ready-to-Wear Store.

2. Cut pictures of clothing, mount and hang about the schoolroom.

3. Make price tags.

4. Make check books and sales pad out of scrap paper. Measure each sheet for uniform size.

GAME: The schoolroom is divided into various departments, such as dress, suit, coat, skirt, boys' suits, etc. Several Clerks are chosen and given a certain department. The Clerks use yardsticks and tape measures and may also be provided with a pad to mark the measurement, or the blackboard may be used. It is interesting to pro-

vide sales books and ask the Clerks to make out a simple slip, such as

1 coat.....\$ 10.00

1 dress..... 5.00

Total\$ 15.00

This is an excellent disguise for teaching not only arithmetic but also spelling.

The prospective customer enters the store, and states the items of apparel he wishes to purchase.

A Floor Walker at the door directs him to the proper department. The position of Floor Walker is excellent training for the timid pupil.

The Clerk takes the customer's measurements. Sometimes a dull pupil is assisted in this by the Head Clerk. The Clerk, after taking the measurements, decides what size will be correct. The customer is shown several models and makes his choice. He pays the Clerk after he receives his bill and then takes his purchase home.

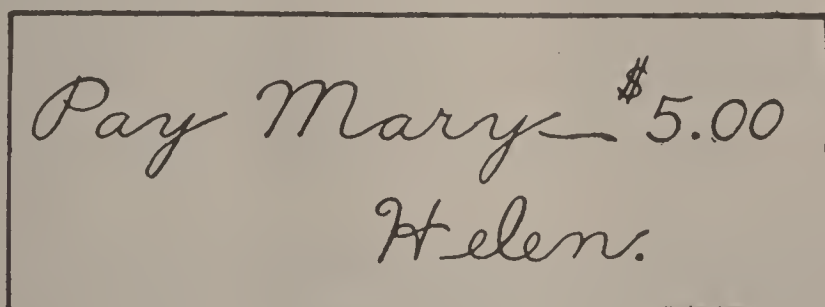
Sometimes the customers bring toy money and pay with it; or they bring button money and count out the price, the size and color of the

buttons representing different values. This is excellent drill in correct counting with objects.

The pupils, after learning to count and write numbers, enjoy making their own money with milk-bottle labels or cardboard and tin foil.

Writing checks for their purchases is often more interesting than making toy money. Odd scraps of paper are saved from day to day. Pupils cut these into uniform size. Small booklets or check books are made by pinning papers together.

The pupils may write a check when making a purchase. At first this may be made very simple, making the figure and writing cents or dollars.



Later a more difficult form may be used, such as

Pay	Henry Brown	\$ 2.00
Two Dollars		
	James Hall	

Still later teach writing the town and date, and attempt to use the form illustrated below.

No. <u>79</u>	Anytown, Pa., <u>June 23, 1927</u>
Some Bank	7
Pay to the order of <u>Grocery Store</u>	\$ <u>2.07</u>
<u>Two and $\frac{07}{100}$</u>	<u> </u> Dollars
	<u>Some Child</u>

XL

SHOE STORE

MATERIAL: Pictures of shoes. Different sizes of shoe boxes. Rulers.

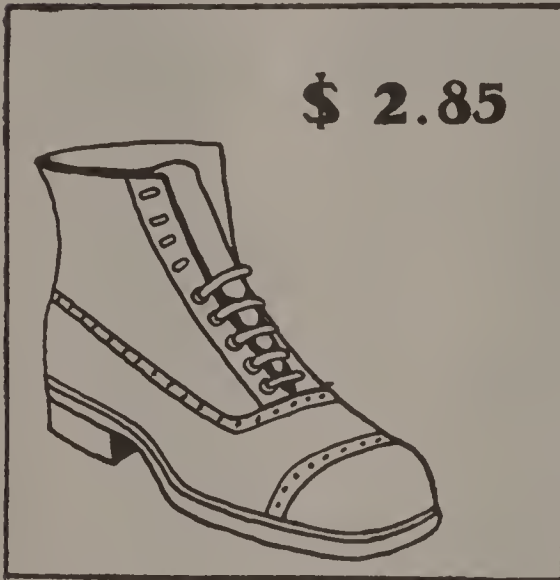
OBJECT: Counting and recognition of *inches* through actual measuring. Buying and selling.

PROJECTS: 1. Arrange a shoe store.
2. Cut pictures of shoes from advertisements.
3. Bring to school different kinds of shoes, as slippers, oxfords, walking shoes, boots, etc.
4. Bring different sizes of shoe boxes.
5. Study the materials used in making shoes.
6. How these materials are obtained.

GAME: The store is arranged by placing the kindergarten chairs or benches back to back as in a shoe store. The Clerk's stool or chair should face the customer. Several Clerks are chosen for this game.

The customer places his foot upon the ruler and the Clerk marks upon the floor or ruler the amount measured. The Clerk counts the inches,

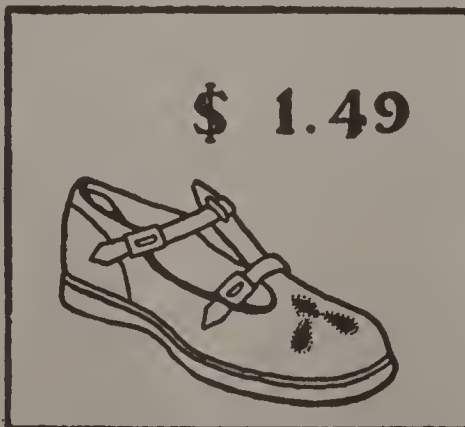
and the customer verifies his accuracy by also counting. Then the Clerk brings for selection several shoes marked the corresponding number of inches. The customer makes his selection and pays as in the preceding game.



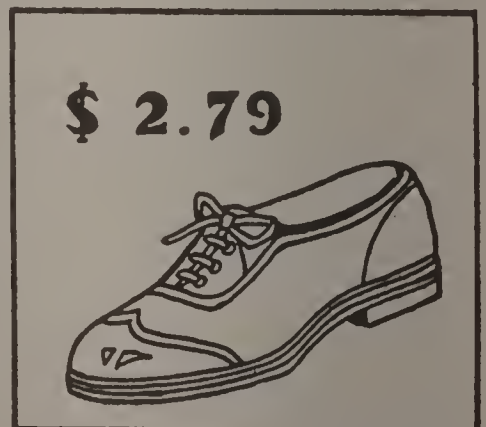
\$ 2.85



\$ 3.98



\$ 1.49



\$ 2.79

XLI

TAKING ACCOUNT OF STOCK

MATERIAL: That used in any of the store games, especially the Five- Ten- and Twenty-five Cent Store.

OBJECT: Learning to use a tape measure and yardstick through practice.

Learning the dollar and cent marks through actual usage.

Placing the correct point when writing sums, as \$1.35, etc.

Training in classification.

Column addition and multiplication emphasized.

Coöperative group work.

Following directions and carrying out an assignment.

Seat work for single groups.

Training in writing and spelling.

PROJECTS: 1. Assign a group or one pupil to take account of the stock of merchandise in the hardware department. Each pupil makes a list. All

lists are compared and inspected by the manager or owner of the store. The best list may be displayed.

2. Assign another group to take account of the stock in the toy department, etc.

These groups may work at the same time or they may be divided into various time shifts during the school day.

Complete Amount of Stock.

Article	Price	Amount		Total
Postal Cards	6 for 5¢	7½ doz.		
Tablets	@ 5¢	2½ doz.		
Pencils	2 for 5¢	6 doz.		
Candy Jars	@ 25¢	12 doz.		
Nut Candy	@ 10¢	11¼ lbs.		
Chocolate Candy	@ 25¢ 1b.	20 lbs.		
Lace (wide)	@ 15¢ yd.	3⅓ yds.		
Lace (narrow)	@ 5¢ ½ yd.	6 yds.		
Dolls	@ 10 ¢	1 doz.		
Drums	@ 25 ¢	2½ doz.		
Towels	@ 25 ¢	3½ doz.		
Rope	@ 5 ¢ ft.	11 yds.		

The pupils never tire of such arithmetic drill dressed or disguised as projects. They enjoy these motivating lessons, since this method takes away the monotony and gives them a real reason for arithmetic.

3. Assign a group to take account of all the stock.

XLII

TELEPHONE EXCHANGE

MATERIAL: Toy telephone.

OBJECT: To teach pupils to read numbers containing several digits. Writing numbers and words. Spelling.

PROJECTS: 1. Make telephone books. Use scrap paper and write in the book the name and number assigned each pupil, also house number and street.

2. Include names of stores, as Grocery, Florist, Fruit Store, Bakery, etc. School telephone, school nurse and nearest fire alarm station may be added.

If possible arrange in alphabetical order.

3. Make a card, according to measure, containing the different stores' telephone numbers.

4. Use a tablet back and make a memorandum card of persons frequently called by telephone in the home. Decorate with simple border pattern in crayons. Take the card home for parents' use.

GAME: Assign a number to each pupil.

A child goes to the telephone and calls a number.

All the pupils are listening for the number. The child whose number is called plays he has a telephone at his desk.

A conversation takes place.

“This is number 3467 speaking. Is that number 5985?”

“Yes, this is number 5985.”

Or, “No, this is number 9382. Central gave you the wrong number.”

“I want to ask you, can you tell me how many threes in 36?”

If the player answers correctly, he has a turn to call some one.

Change the conversation and call the bakery and inquire the prices of pastry.

“How much are doughnuts a dozen, Mr. Baker?”

“Twenty cents.”

“Send me a half dozen. How much is that?”

“Ten cents. I will send the bill for ten cents. Thank you.”

The Baker has a turn to call some one for an order. If he made a mistake in his calculation, he loses a turn.

Florist	4739
Bakery	257
Milkman	9806
Fruit Store	39
Drug Store	3906
Grocery	107

XLIII

THE FARMER AND THE FOX

MATERIAL: Tag board for cutting. Heavy crayons.

OBJECT: Quiet drill game at the desks in division.
Correct language expressions.

PROJECTS: 1. Cut number cards $1\frac{1}{2}$ x $2\frac{1}{2}$ inches.
Plan how many cards of this size can be cut from a regular sized sheet of tag board.

2. Mark a number on the cards and the division sign, or write a division problem on each card.

GAME: Pass cards to the pupils at the desks, one card to a child.

Choose a Farmer. The Farmer walks up and down the aisles and stops where he pleases. He says to a pupil, "Fox, have you been eating my sheep?"

Pupil looks at his card and says, "No, I am not a Fox. I am $24 \div 3 = 8$." If the pupil gives the wrong answer, the Farmer says, "You are a Fox."

He raises his hand, aims and says, “Bang,” and the Fox is dead.

The Farmer then looks for another Fox. This game never fails to win enthusiasm from the pupils and certainly avoids tedious drill at the blackboard. It can be played rapidly and thus conserve time.

XLIV

THE HEN AND THE HAWK

MATERIAL: Cardboard. Ball of twine.

OBJECT: Initiative in dramatization. Development of mental power and ability to solve number combinations quickly. A chance for the slow pupil to speed up his work.

PROJECT: Cut cardboard tags, size $3\frac{1}{2}$ x $2\frac{1}{2}$ inches. Punch a hole in each one with a regular punch or blunt nail. Paste or write a number on each tag.

Measure 18 inches of twine for each tag. Draw through the hole and tie in a knot.

GAME: Choose a Hawk and a Mother Hen. The Mother Hen chooses six Chickens. Their coop is under the sand table or desk. The Hawk lives in a tree near the chicken coop.

Dramatize the game and encourage free expression from the players.

MOTHER HEN [*holding the cards*]. Come here, chickens. I have a name for each one of you.

[THE CHICKENS *fly to* MOTHER HEN.]

MOTHER HEN. Your name is 12 [*putting the card around the player's neck*]. Your name is 24. Let us hunt for worms. Chick, chick.

CHICKENS. Peep, peep! [*They follow MOTHER HEN.*]

HAWK [*flies to MOTHER HEN with a rush*]. I have come for your chickens.

MOTHER HEN. You cannot have them. Go away.

HAWK. I will not go until you tell me the name of each chicken.

MOTHER HEN [*flying to a CHICKEN and pointing*]. This is 12.

HAWK. Tell me the whole name.

MOTHER HEN. $4 \times 3 = 12$.

The Mother Hen flies to each chicken and tells its name. If she fails to tell the whole name [combination] correctly, the Hawk says, "This is my chicken. You did not know its name."

The Hawk carries off all the Chickens the Hen forfeits.

A new group of players may be chosen and the game continued as before.

XLV

THE HUNGRY RABBIT

MATERIAL: Green paper for cutting. One-half sheet of stiff white or brown cardboard. A small block of wood about 7 x 5 x 6 inches. Tacks or paste.

OBJECT: Drill in multiplication for the slow pupil.
Dramatization for the timid pupil.

PROJECT: Cut green cabbage leaves out of paper.
Write a multiplication combination on each leaf.

Cut a rabbit out of stiff cardboard. Make a slit in the cardboard for his mouth. Tack the rabbit to the broad face of the block, or make a groove in the center of the block and paste the rabbit in the groove.

GAME: Place the Rabbit on the table. Choose a child to stand near the Rabbit and imitate him. Distribute the cabbage leaves among the class.

A pupil goes to the Rabbit and asks, "What is the matter, Rabbit?"

The Rabbit replies, "I am hungry."



Child says, "I brought you some cabbage leaves to eat. I will feed you."

"Thank you," replies the Rabbit.

The child tells the number combination before putting the cabbage leaf in the Rabbit's mouth. [The leaf goes through the Rabbit's mouth and falls behind him.] The child feeds all his leaves

to the Rabbit. If the child fails to tell the correct answer, he gives his cabbage leaves to another child.

The Rabbit says, "Thank you," after he is fed.

Another player comes to the Rabbit and the same conversation takes place between them.

XLVI

THE ORGAN GRINDER

Oh, come now and do not wait!
The organ grinder is by the gate.
See the monkey dressed so gay!
Hear the merry organ play!

Here's a penny for your play.
"Thank you," nods the monkey gay.
"We'll be back again some day,
Then for you we'll dance and play!"

MATERIAL: A large cardboard box. A toy music-box. A piece of tape about a yard long. Toy money, five- and ten-cent pieces.

OBJECT: To drill counting through play. Special emphasis on counting by fives and tens.

PROJECT: Make an organ grinder's music-box. If a toy music-box with a handle is available, use it. Cut an opening in the side of the cardboard box for the handle to slip through. The player may turn the handle and make the music. If a toy music-box is not available, run a piece of heavy wire through the sides of the box. The ends of the wire should project from each side. The end

of the wire projecting from the right side of the box should be twice as long as the wire on the opposite side. Bend the long end for a handle. Bend the short end to prevent it slipping through the box.

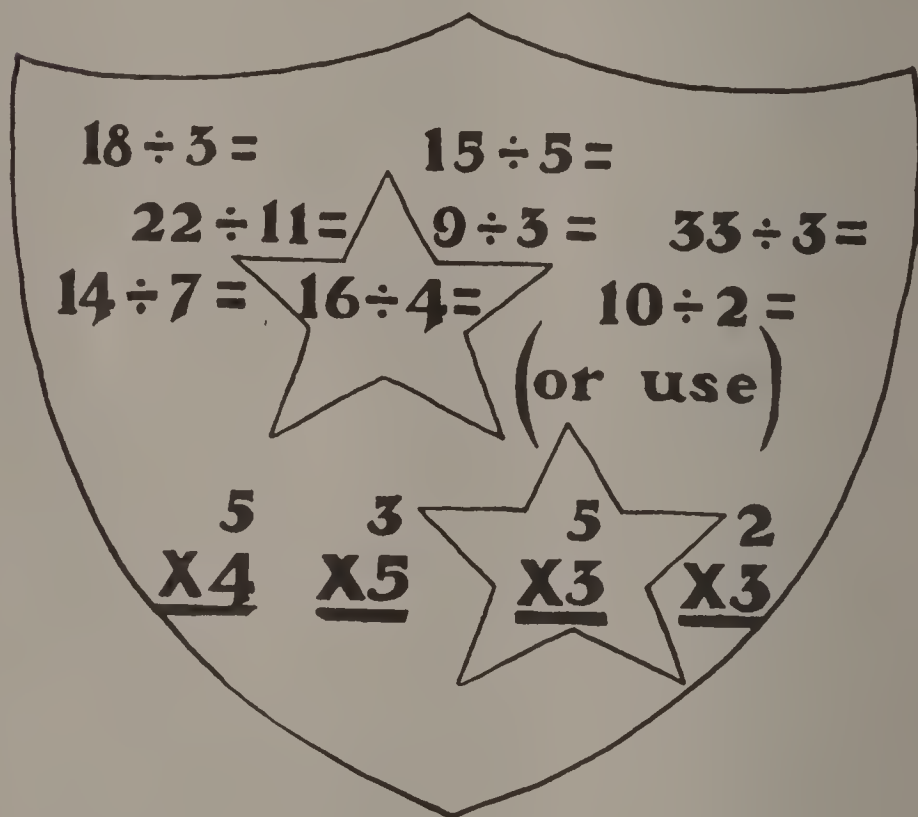
The tape is run through the top of the box for a strap to carry the organ around the player's neck or shoulder.

Player turns the handle and sings.

GAME: Choose an Organ Grinder and a Monkey, also several children to give money to the Monkey. The players suit the action to the words. After the money is dropped in the Monkey's cap, the Musician counts it. He counts the dimes by tens and the nickels by fives. He then totals the result. The pupils enjoy this game at recess and during an indoor period.

XLVII

THE KNIGHT'S SHIELD



MATERIAL: White cardboard. Red and blue paper.

OBJECT: Rapid drill in the four arithmetical processes. Helpfulness towards others.

PROJECTS: 1. Study shields and their origin.

2. Bring pictures of shields to school.

3. Cut a shield according to pattern.

4. Plan one large shield to be cut out of a given sized piece or sheet of cardboard.
5. Cut stars of paper.
6. Study the subject of knighthood.
7. Bring pictures of knights to school.
8. Why can Washington be called a knight?
9. If used for Lincoln's birthday, have the class study the question: Why can Lincoln be called a knight?

GAME: Draw a large shield on the blackboard. Scatter number combinations on the shield. Choose a pupil to be a knight. Let him stand near the shield.

A pupil goes to the Knight and says, "I want to be a Knight."

First Knight answers, "You must first conquer these problems."

The First Knight points to a problem and the pupil gives the answer. If correct he draws a star around that combination. He continues until the shield is filled with stars. The Knight then gives him a small red, white and blue shield to wear, and now he is a Knight. If the pupil

fails to tell a correct answer he must return to his desk. He has not won a shield.

A new shield is drawn and new combinations placed upon it. Another pupil contests for the shield. The pupils dislike to return defeated.

The slow ones may often be stirred to mental activity by this contest when other means fail.

After the game the Knights parade about the room to martial music. Then each Knight chooses a pupil who has failed to win a shield and, going to different places at the board, helps him to review the combinations.

XLVIII

TOSS AROUND THE RING

MATERIAL: A soft ball or bean bag.

OBJECT: To increase speed in multiplication or any of the four arithmetical processes; to cultivate physical poise and judgment of distance.

PROJECTS: 1. Go to a store and learn the prices of balls, also get various kinds of balls.

2. Cut cloth according to measure; sew bean bags; buy beans; learn the terms *pint*, *quart* and *pound*. If an advanced grade pupil can calculate the amount of cloth needed to make each pupil a bag, he may collect money from each pupil, keep an account, go for samples, compare kinds of cloth and purchase material.

GAME: Let the pupils form a ring. The Leader stands in the center and calls "four sixes." He tosses the ball to a child who instantly replies, "24," and tosses it back to the Leader. If the pupil fails to answer correctly, he steps out of

the circle and the players close the space. Continue around the ring until all the players have had a turn. A new Leader is chosen and a new ring formed. This game should be played rapidly.

XLIX

TUMBLE SPOOL

MATERIAL: Eleven empty spools. Numbers cut from calendars. A heavy rubber or wooden ball to roll on the floor.

OBJECT: Skill in addition and multiplication.

PROJECT: Paste a number on each spool. Place the spools upon the floor in a row; or three in a row, two in a row behind the first row, and two in a row behind the second row.

GAMES: A guard mark is placed upon the floor. The pupils form a line in order to conserve time. The first player stops at the guard line. He stoops and aims the ball at a certain spool. He picks up the spool or spools he knocked over and counts his score by adding the numbers on the spools. The scoring may be done mentally or on the blackboard or tablets. The highest score wins.

L

WHERE ARE YOU GOING?

MATERIAL: Tag board for cutting. Calendar pads.
Paste.

OBJECT: Drill in the four arithmetical processes.
Recognition of the signs used in connection with
the process. Dramatization for the slow and
timid pupil.

PROJECT: Measure tag board and cut oblongs 4 x 3
inches from it. Calculate how many can be cut.
Cut numbers from calendar pads and paste a
number on each card. Put an addition, subtraction,
multiplication or division sign below the
number.

5 —	16 x	4 ÷	24 +
---------------	----------------	---------------	----------------

Pupils may cut numbers free hand and mount,
if calendars are not available, or use crayons
and write the numbers.

GAME: Choose any number of players. Give each player a card containing a number. The players may stand in a row or be scattered about the room.

Choose one player for Bunny Rabbit. He may stand at the end of the row. He does not hold a card.

Choose one player for Tommy Rabbit. He hops to the first player.

FIRST PLAYER. Where are you going?

TOMMY RABBIT. I am hunting for my brother, Bunny Rabbit.

FIRST PLAYER. Am I Bunny Rabbit?

TOMMY RABBIT. No, you are $12 \div 3 = 4$.

Tommy Rabbit hops to the second player and the same conversation takes place. Each time he must tell a number combination whose sign and answer are found on the card. If he fails to tell correctly the name [number combination] of the player, he must turn back and go without his brother.

The last person visited is brother Bunny Rabbit.

BUNNY RABBIT. Where are you going?

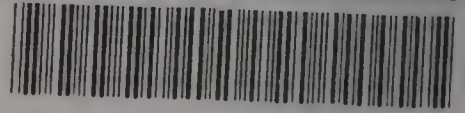
TOMMY RABBIT. I am hunting for my brother, Bunny Rabbit.

BUNNY RABBIT. Am I Bunny Rabbit?

TOMMY RABBIT. Yes, you are. Come, hop home with me.

The two Rabbits hop home. A new group of players with other cards are chosen to play the game.

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